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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,764	02/12/2004	Geoffrey McLennan	IOWA:047US	2960

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EXAMINER

DO, ANH HONG

ART UNIT	PAPER NUMBER
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2624

MAIL DATE	DELIVERY MODE
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07/16/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/777,764

Applicant(s)

MCLENNAN ET AL.

Examiner

ANH H. DO

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-9, 11-15, 18-25 and 28-33 is/are rejected.
- 7) ☒ Claim(s) 4, 10, 16, 17, 26 and 27 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date 2/10/2006.

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "comparing... image data; identifying... image data", "displaying... medical image; comparing... medical image; highlighting... medical image", "acquiring... an endoscope; displaying... medical image; comparing... the region of interest; highlighting... the region of interest" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-3, 14, 15, 24 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Suzuki et al. (U.S. Patent No. 6,819,790).

Regarding claim 1, Suzuki discloses:

- comparing a subject color medical image to normal color medical image data

(Fig. 1(a): a subject medical color image 108 is compared to a normal medical image 106 using pixel comparison unit 110);

- identifying abnormal pixels from the subject color medical image (Fig. 1(a): error calculation unit 112; and col. 15, lines 9-13: determining whether a certain pixel belongs to a class such as normal or abnormal).

Regarding claim 2, Suzuki teaches using an endoscope for acquiring the subject color medical image as shown in Figs. 14(a) and 14(b).

Regarding claim 3, Suzuki teaches the subject medical color image has been

converted from an image that is acquired initially in gray scale (col. 26, lines 48-53: average gray level).

Regarding claim 14, Suzuki discloses:

- displaying a subject color medical image (col. 16, lines 29-31);
- comparing the subject color medical image 108 to normal color medical image data 106 (Fig. 1(a)) to identify abnormal pixels from the subject color medical image (col. 15, lines 9-13: determining whether a certain pixel belongs to a class, such as normal or abnormal);
- highlighting abnormal pixels on the displayed subject color medical image (col. 16, lines 29-31: displaying a nodule at a center).

Regarding claims 15 and 25, Suzuki teaches the subject medical color image has been converted from an image that is acquired initially in gray scale (col. 26, lines 48-53: average gray level).

Regarding claim 24, Suzuki discloses:

- acquiring a subject color medical image using an endoscope (image shown in Figs. 14 (a) and 14(b));
- displaying a region of interest from the subject color medical image (col. 16, lines 29-36: displaying a local window Rs);
- comparing the region of interest to normal color medical image data (Fig. 1(a): comparing the local window of the image 108 to normal color medical image 106) to identify abnormal pixels from the region of interest (col. 15, lines 9-13);

- highlighting abnormal pixels on the displayed region of interest (col. 16, lines 29-31: displaying a nodule at a center of local window).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5-9, 11-13, 18-23, and 28-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (U.S. Patent No. 6,819,790) in view of Fotland (U.S. Patent No. 6,873,438).

Regarding claim 5, Suzuki discloses identifying abnormal pixels (col. 15, lines 9-13).

Suzuki does not disclose expressly the pixels being abnormal in terms of saturation.

Fotland discloses the pixels are abnormal in terms of saturation (col. 3, lines 5-8: the distortion in terms of color level (saturation, hue or lightness)).

Suzuki & Fotland are combinable because they are from a method of detecting a medical image error for correction.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to identify the abnormal image pixels in terms of saturation.

The suggestion/motivation for doing so would have been to minimize or eliminate image blink on a monitor (Fotland, col. 3, lines 9-10).

Therefore, it would have been obvious to combine Suzuki with Fotland to obtain the invention as specified in claim 5.

Regarding claim 6, Fotland teaches the pixels being abnormal in terms of hue (col. 3, lines 9-10).

Regarding claims 7, 18 and 28, Suzuki teaches providing a variable threshold to determine whether a pixel from the subject color medical image is abnormal (col. 14, lines 8-11: threshold block 122 compares a threshold value to a score to determine an abnormality in the medical image).

Suzuki does not expressly teach determining whether the pixel is abnormal in terms of saturation or hue.

Fotland teaches determining the abnormality in the image in terms of saturation or hue (col. 3, lines 5-8).

The motivation for combining the two references is set forth in the discussion of claims 5 and 6 above.

Regarding claims 8, 9, 11, 12, 19-22 and 29-32, Suzuki teaches displaying a histogram (Fig. 6).

Suzuki does not expressly teach the histogram including saturation information and hue information about the medical image.

Fotland teaches displaying the saturation and hue information of the medical image (col. 3, lines 4-8).

The motivation for combining the two references is set forth in the discussion of claims 5 and 6 above.

Regarding claims 13, 23 and 33, Suzuki teaches a computer readable medium comprising instructions for implementing the steps of the method of any previous claims (col. 25, lines 31-41).

Allowable Subject Matter

6. Claims 4, 10, 16, 17, 26, and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 4, 16, and 26, the prior art, taken either singly or in combination, does not teach:

- converting the device dependent color space to a device independent color space.

Regarding claims 10, 17, and 27, the prior art, taken either singly or in combination, does not teach:

- displaying the subject color medical image and highlighting areas of the subject color medical image that have a saturation that is greater than normal.

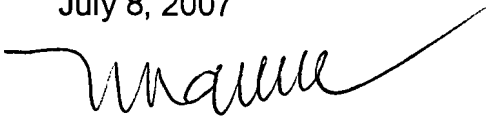
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANH H. DO whose telephone number is 571-272-7433. The examiner can normally be reached on 5/4-9.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, EILEEN LILLIS can be reached on 571-272-6928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

July 8, 2007



ANH HONG DO
PRIMARY EXAMINER